ABSTRACT

A staggered torsional electrostatic combdrive includes a stationary combteeth assembly and a moving combteeth assembly with a mirror and a torsional hinge. The moving combteeth assembly is positioned entirely above the stationary combteeth assembly by a predetermined vertical displacement during a combdrive resting state. A method of fabricating the staggered torsional electrostatic combdrive includes the step of deep trench etching a stationary combteeth assembly in a first wafer. A second wafer is bonded to the first wafer to form a sandwich including the first wafer, an oxide layer, and the second wafer. A moving combteeth assembly is formed in the second wafer. The moving combteeth assembly includes a mirror and a torsional hinge. The moving combteeth assembly is separated from the first wafer by the oxide layer. The oxide layer is subsequently removed to release the staggered torsional electrostatic combdrive.